




ADOPTED

BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

20 November 17, 2015


PATRICK OZAWA
ACTING EXECUTIVE OFFICER

Los Angeles County
Board of Supervisors

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November 17, 2015

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, California 90012

Dear Supervisors:

**AUTHORIZE THE ACQUISITION OF VIRTUAL DESKTOP
INFRASTRUCTURE HARDWARE AND SOFTWARE FOR THE
DEPARTMENT OF HEALTH SERVICES DATA CENTERS
(ALL SUPERVISORIAL DISTRICTS)
(3 VOTES)**

**CIO RECOMMENDATION: APPROVE (X) APPROVE WITH MODIFICATION ()
DISAPPROVE ()**

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www.dhs.lacounty.gov

*To ensure access to high-quality,
patient-centered, cost-effective
health care to Los Angeles County
residents through direct services at
DHS facilities and through
collaboration with community and
university partners.*

SUBJECT

Authorize the acquisition of Virtual Desktop Infrastructure hardware, software, and professional services for an additional 3,000 desktop users across the Department of Health Services.

IT IS RECOMMENDED THAT THE BOARD:

Authorize the Internal Services Department (ISD), as the County's Purchasing Agent, to proceed with the acquisition of Virtual Desktop Infrastructure (VDI) hardware, software, and professional services for all Department of Health Services (DHS) Data Centers, with a total cost of \$3,460,998, as this purchase will exceed the \$250,000 capital asset threshold established by the Board.



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PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

Approval of this action will allow for the acquisition of additional VDI hardware, software, and professional services for two DHS sites, including support, configuration, installation, testing, three years of maintenance, and a three year warranty. On February 4, 2014, the Board approved the initial acquisition of VDI hardware and software for Phase 1 of this ongoing project, for 3,000 desktop users and continuation. This acquisition is Phase 2 in DHS' ongoing project to expand VDI to support an additional 3,000 desktop users. This effort is part of DHS' various systems consolidation strategy and also supports the Electronic Health Record system known as the Online Real-Time Centralized Health Information Database (ORCHID). The VDI hardware and software is needed to: 1) centralize user and desktop management within each local DHS Data Center to provide user desktop access, while reducing the ongoing operating costs of managing, maintaining, and servicing an additional 3,000 users and their desktops across all DHS facilities; 2) enable the use of lower cost zero-client terminals in the place of desktop personal computers for access by users; 3) provide enhanced security by centralizing administration of approved user desktop applications, user access permissions, and enabling single user sign-on through a badge-based Radio Frequency Identification System; and 4) as needs increase, provide for future growth as the hardware will include sufficient data and computing capacity to meet DHS' current needs.

In addition, replacing its current clinical information system (the QuadraMed Affinity suite) with ORCHID, requires virtual hardware (desktop) upgrades. As a result, some of the current hardware (legacy desktops) will be replaced with new virtual hardware. These efforts are part of DHS' goal of standardizing desktop images across DHS facilities.

Implementation of Strategic Plan Goals

The recommended action will support Goal 1, Operational Effectiveness/Fiscal Sustainability, of the County's Strategic Plan.

FISCAL IMPACT/FINANCING

The total one-time estimated net cost of the hardware and software is \$3,460,998 for this phase 2 acquisition and includes professional services, three years maintenance, and a three-year warranty. The details comprising the estimated total costs are shown in Attachment II.

Funding is included in DHS' Fiscal Year (FY) 2015-16 Final Budget.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

On October 16, 2001, the Board approved the classification categories for fixed assets and new requirements for major fixed assets (now referred to as capital assets) purchases requiring County departments to obtain Board approval to purchase or finance equipment with a unit cost of \$250,000 or greater prior to submitting their requisition to ISD.

The County's Chief Information Officer recommends approval of this purchase and that Office's Analysis is attached (Attachment I).

CONTRACTING PROCESS

This is a commodity purchase under the statutory authority of the County's Purchasing Agent. This acquisition will be competitively bid by the County's Purchasing Agent in accordance with County Purchasing Policies and Procedures established by ISD.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

Approval of the recommendation will enable continued implementation of DHS' various systems consolidation strategies and support ORCHID.


Respectfully submitted,



Mitchell H. Katz, M.D.

Director

Reviewed by:



RICHARD SANCHEZ

Chief Information Officer

MHK:RS:mm

Enclosures

c: Chief Executive Office
County Counsel
Executive Office, Board of Supervisors
Internal Services Department



RICHARD SANCHEZ
CHIEF INFORMATION OFFICER

Office of the CIO
CIO Analysis

NUMBER:

CA15-19

DATE:

11/5/2015

SUBJECT:

**AUTHORIZE THE ACQUISITION OF VIRTUAL DESKTOP INFRASTRUCTURE (VDI)
HARDWARE AND SOFTWARE FOR THE DEPARTMENT OF HEALTH SERVICES
DATA CENTERS**

RECOMMENDATION:

☒ Approve

☐ Approve with Modification

☐ Disapprove

CONTRACT TYPE:

☐ New Contract

☐ Sole Source

☐ Amendment to Agreement

☒ Other:

CONTRACT COMPONENTS:

☒ Software

☒ Hardware

☐ Telecommunications

☒ Professional Services

SUMMARY:

Department Executive Sponsor: Mitchell H. Katz, M.D., Director, Department of Health Services

Description: Authorize the Internal Services Department (ISD), as the County's Purchasing Agent, to purchase Virtual Desktop Infrastructure (VDI) hardware, software, and professional services for two Department of Health Services (DHS) primary data centers, with a total cost of \$3,460,998.

Contract Amount: \$3,460,998 (Phase 2)

Funding Source: Fiscal Year 2015-16 Final Budget

☐ Legislative or Regulatory Mandate

☐ Subvened/Grant Funded: Enter %

**Strategic and
Business
Analysis**

PROJECT GOALS AND OBJECTIVES:

The new VDI hardware and software is needed to:

1. Centralize desktop access while reducing the ongoing operating costs of managing, maintaining, and servicing of virtual desktops across all six (6) DHS facilities;
2. Enable the use of lower cost zero-client terminals instead of personal computers;
3. Provide enhanced security (using dual factor authentication as needed) by centralizing administration of approved user desktop applications, user access permissions, and enabling single user sign-on through badge-based Radio Frequency Identification (RFID) System; and
4. Provide for future growth as the hardware will include sufficient data and computing capacity to meet DHS' current needs and also allow for future expansion as needs increase.

BUSINESS DRIVERS:

This effort is part of DHS' systems consolidation strategies and also supports the Electronic Health Record (EHR) System known as the Online Real-Time Centralized Health Information Database (ORCHID). This Virtual desktop initiative will streamline management of desktops and give the flexibility of users to access information seamlessly from anywhere.

DHS completed a technical readiness assessment and determined that ORCHID requires hardware (desktop) upgrades to support the ORCHID software and it has been determined that Virtual desktop is a more efficient implementation.

PROJECT ORGANIZATION:

The project will be managed by Enrique Garcia, Associate Chief Information Systems and Brenny Ortega, Information Technology Manager II. A team of six members, one from each facility has been formed to lead this effort throughout DHS. A detailed project structure that includes DHS and vendor resources is in place. An estimated 25-member team between DHS and vendors are committed to ensure successful implementation of this project. The Project Phase 0 and 1 have been successfully completed.

PERFORMANCE METRICS:

This project will continue to be measured on the following success criteria:

First time login is approximately 18 seconds versus 40 seconds in a desktop. After that, it takes approximately six seconds to login in a "follow me" session. There is no degradation of response time from applications and there may be a better response time due to improved optimization because of AppSense.

STRATEGIC AND BUSINESS ALIGNMENT:

VDI supports Goal 1, Operational Effectiveness, of the County's Strategic Plan.

PROJECT APPROACH:

In December 2012, DHS completed a comparative and ROI/TCO analysis between Citrix and VMware products, consulted Gartner for recommendations, and determined VMware as the preferred solution. DHS then completed a proof of concept phase followed by a pilot phase with more than 300 desktops across the DHS facilities. This led to the preliminary production design document. The phased implementation is as follows:

Phase 0: December 2013 – April 2014 - Completed

Phase 1: April 2014 – June 2015 - Completed

Phase 2: September 2015 - June 2016

Purchase and implementation of additional computer and storage to support 1000 remote desktops hosted at the MLK's Data Center Vblock, and 2,000

desktops for DHS ACN Clinical Facilities hosted at the LAC+USC's Data Center Vblock. Remote VDI sessions will be hosted from the MLK Data Center and LAC+USC's Data Center.

Future Phases (3, 4, and 5, respectively): July 2016, 2017, & 2018

Additional compute and storage to support 500 desktops for LAC+USC, OVMC, and HUCLA, 1,000 desktops for MLK, 250 desktops RLA, and HD.

ALTERNATIVES ANALYZED:

This is a commodity purchase under the statutory authority of the County's Purchasing Agent. DHS intends to proceed with the existing technology vendors, this being a Phase 2 of an already vetted technology. This acquisition will be competitively bid by the County's Purchasing Agent in accordance with County Purchasing Policies and Procedures established by ISD for the implementation vendor.

**Technical
Analysis**

Analysis of proposed IT solution

This Phase 2 VDI hardware and software will provide virtual desktop access for an additional set of 3,000 devices at DHS' ACN Clinical facilities and remote VDI clinical providers. VDI will enable centralization of users management and desktops within two DHS Data Centers (LAC+USC and MLK), thereby reducing ongoing operating costs; it will enable the use of lower cost zero-client terminals for end-user access to desktops and improve security of user desktops by centralizing management of approved desktop applications, user permissions, and enabling RFID badge based authentication.

The following is a partial list of the hardware, software technology stack that will be used for DHS' virtual deployment:

Hardware:

Additional compute and storage for (2) VCE VBlock 340 systems with VNX 7600 storage arrays in core data centers (MLK & LAC+USC) to support the additional 3,000 virtual desktops.

Solution components:

Infrastructure Management Software: Cisco UCS Director.

User virtualization and profile management: AppSense.

Server storage performance management Software: Pernix.

Backup Solution:

Avamar and Data Domain.

**Financial
Analysis**

BUDGET: GOT TO BREAK DOWN BY YEARS....

Costs:**Past Proposal (Phase 1 – FY 2013-1014)**

Hardware Subtotal.....	\$ 2,052,460
Software Subtotal.....	\$ 2,093,737
Maintenance and Support Subtotal.....	\$ 1,314,084
Services.....	\$ 1,920,119
Sales Tax.....	\$ 178,894

Total: **\$ 7,559,294**

This Proposal (Phase 2 – FY 2015-1016)

Hardware Subtotal.....	\$ 1,513,762
Software Subtotal.....	\$ 770,047
Maintenance and Support Subtotal.....	\$ 353,751
Services and Training	\$ 679,630
Sales Tax	\$ 143,808

Total: **\$ 3,460,998**

Future Phases (Phases 3 -5 – FY 2016-19)

Estimated Total for Phases 3-5: \$10,740,000

Total Anticipated Project Costs (Approx.): \$21,760,292

Risk Analysis**RISK MITIGATION:**

Issues, like response time due to suboptimal bandwidth, and applications not aligned with single sign on, have been resolved.

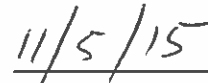
The Chief Information Security Officer (CISO) reviewed the request and has suggested a dual factor authentication for access from outside the firewall. Other than this, CISO did not identify any other IT security or privacy related issues.

CIO Approval

PREPARED BY:



Sanmay Mukhopadhyay, Sr. Associate CIO



Date

APPROVED:



Richard Sanchez, County Chief Information Officer



Date

Please contact the Office of the CIO (213.253.5600 or info@cio.lacounty.gov) for questions concerning this CIO Analysis. This document is also available online at <http://ciointranet.lacounty.gov/>

ATTACHMENT II

Description	One Time Cost
Hardware Subtotal	\$ 1,513,762.10
Software Subtotal	\$ 770,047.32
Maintenance and Support	\$ 353,751.18
Services + Training	\$ 679,630.00
Sales Tax	\$ 143,807.40
<u>Grand Total</u>	\$ <u>3,460,998.00</u>